



Incidental Tc-99m MDP Uptake in Cortical-subcortical Parietotemporal Cerebral Area in a Patient with a History of Recent Ischemic Cerebrovascular Event who Underwent Whole-body Bone Scan

Yakın Zamanda İskemik Serebrovasküler Olay Öyküsü Olan ve Tüm Vücut Kemik Taraması Yapılan Bir Hastada Kortikal-subkortikal Parietotemporal Serebral Alanda Tesadüfen Saptanan Tc-99m MDP Tutulumu

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Abstract

The authors present Tc-99m methylene diphosphonate (MDP) uptake in the right parietotemporal area at whole-body bone scan (WBBS) in 75 years male patient with prostate adenocarcinoma Gleason score 3+4 (pT2N0Mx). No residual or metastatic disease was detected in the patient's Gallium-68 prostate-specific membrane antigen positron emission tomography/computed tomography four months before WBBS. The patient had undetectable prostate-specific antigen levels and underwent WBBS to restage prostate cancer due to equivocal findings in previous WBBS. Current WBBS planar views revealed heterogeneous Tc-99m MDP uptake in the right parietotemporal area and the sphenoid bone in addition to equivocal uptake on the lower lumbar vertebrae. Single-photon emission computed tomography study to identify the MDP-avid lesion on the right cranial area revealed heterogeneous Tc-99m MDP uptake in the right parietotemporal area and sphenoid bone. The patient had a history of transsphenoidal surgery for a hypophyseal tumor two years ago and a recent cerebrovascular event (CVE). Diffusion-weighted magnetic resonance imaging revealed a cortical-subcortical patchy area of restricted diffusion in the parietotemporal region compatible with acute ischemia. Heterogeneous Tc-99m MDP uptake in the right parietotemporal area was attributed to recent CVE and secondary vascular-tissue change-related dystrophic calcification.

Keywords: Bone scan, cortical- subcortical, cerebral, MDP uptake

Öz

Yazarlar 75 yaşında prostat adenokarsinom Gleason skor 3+4 (pT2N0Mx) tanılı erkek hastanın çekilen tüm vücut kemik sintigrafisinde (TVKS) sağ parietotemporal bölgeye uyan alanda izlenen Tc-99m metilen difosfonat (MDP) tutulumunu sunmaktadır. Hastanın TVKS'den 4 ay önce çekilen Galyum-68 prostat spesifik membran antijeni pozitron emisyon tomografi/bilgisayarlı tomografide rezidü veya metastaz saptanmamıştı. Prostat spesifik antijen düzeyi ölçülebilir aralığın altında olan hastaya, önceki TVKS'de saptanan şüpheli bulguların aydınlatılması amacıyla yeniden evreleme amaçlı TVKS çekilmişti. Güncel TVKS'de sağ kraniyal bölgede saptanan Tc-99m MDP tutulumunu aydınlatmak için yapılan tek foton emisyonlu bilgisayarlı tomografi görüntülemesinde sağ parietotemporal bölgede heterojen Tc-99m MDP birikimi, sfenoid kemikte fokal tutulum ve lomber alt vertebralarda nospesifik tutulum izlendi. İki yıl önce hipofiz tümörüne yönelik transfenoidal cerrahi ve yakın tarihli serebrovasküler olay öyküsü mevcuttu. Diffüzyon ağırlıklı kraniyal manyetik rezonans görüntülerinde sağ parietotemporal bölgede kortikal-subkortikal alanda akut iskemi ile uyumlu yamasal difüzyon kısıtlılığı alanı saptandı. Sağ parietotemporal bölgede izlenen heterojen Tc99m-MDP tutulumu yakın tarihli iskemik serebrovasküler olaya ve vasküler-doku değişikliğine bağlı distrofik kalsifikasyona ikincil nitelikte değerlendirildi.

Anahtar kelimeler: Kemik sintigrafisi, kortikal- subkortikal, serebral, MDP tutulumu

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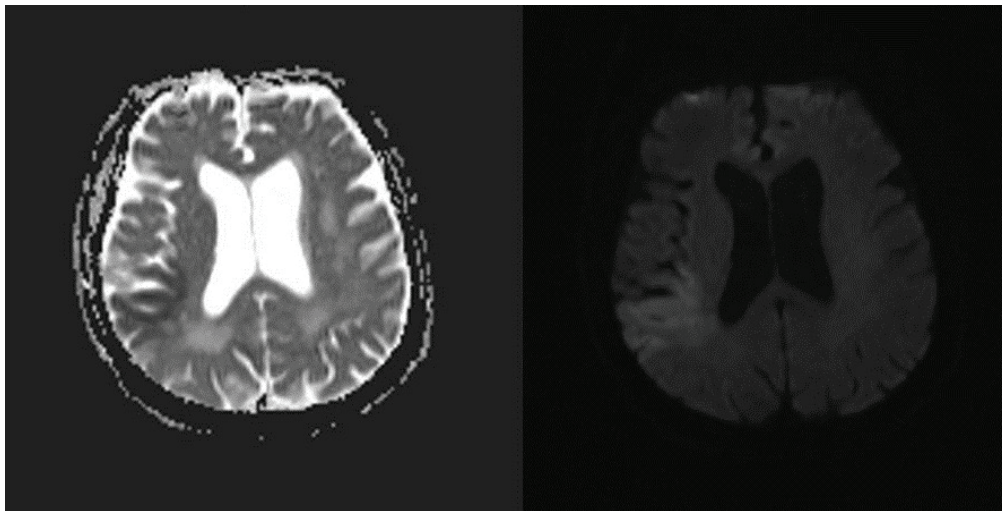


Figure 1. Axial apparent diffusion coefficient (ADC) (left) and diffusion-weighted (DWI) (right) magnetic resonance images (MRI) revealing cortical and subcortical patchy areas of restricted diffusion in parietotemporal region compatible with acute ischemia.

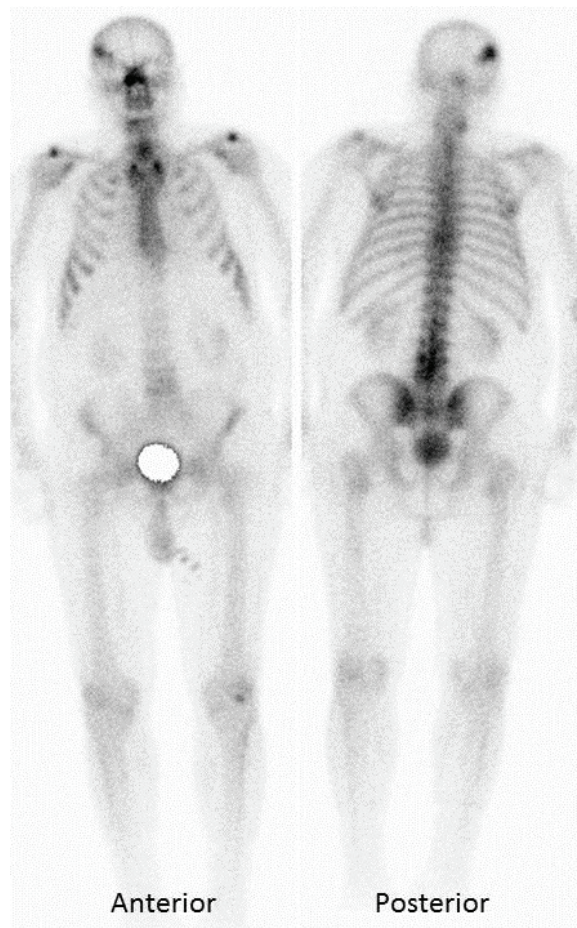


Figure 2. Tc-99m methylene diphosphonate (MDP) whole-body images show MDP avidity at the right cranial region, sphenoidal area, and equivocal activity at lower lumbar vertebrae. The equivocal activity in the lumbar region was attributed to disc herniation and accompanying degenerative changes.

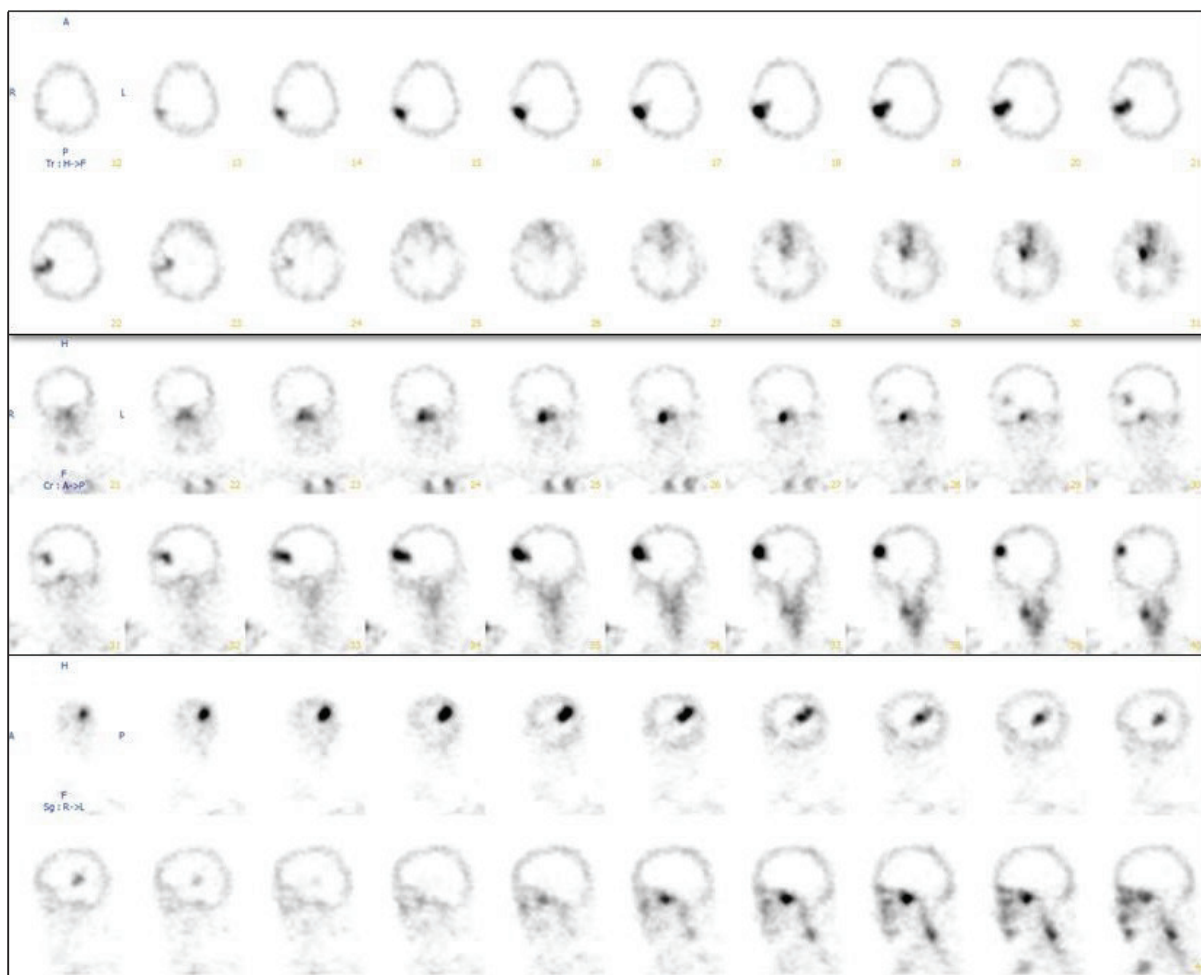


Figure 3. Axial (upper line) and coronal (midline) sagittal (lower line) single-photon emission computed tomography images revealing heterogeneous Tc-99m MDP uptake of the parietotemporal cortical area matching with ADC and DWI MRIs, which showed restricted diffusion compatible with acute ischemia. Uptake on the right sphenoidal region was attributed to the patient's previous transsphenoidal surgery. In addition to primary and metastatic neoplasms, non-malignant and altered uptake of Tc-99m MDP can be seen due to various etiologies. Dystrophic calcification, defined as histologic disruption-induced calcium deposition in tissues after trauma, ischemia, cellular necrosis, or in the enzymatic necrosis of fat, occurs in patients with normal calcium and phosphorus levels (1). Cerebral, myocardial, and muscular infarction-related various Tc-99m MDP uptake patterns have been reported previously (1,2,3,4,5).

Ethics

Informed Consent: Oral and written informed consent of the patient was obtained.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Concept: D.N., Design: D.N., Data Collection or Processing: D.N., S.G., Analysis, or Interpretation: D.N., S.G., Literature Search: D.N., Writing: D.N.

Conflict of Interest: No conflict of interest was declared by the authors.

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